

### **REMARKS/ARGUMENTS**

The Applicants originally submitted Claims 1-14. In previous responses, Claims 2, 5-7 and 10-13 were canceled without prejudice or disclaimer and Claim 14 was withdrawn. In the present response no claims have been amended, canceled, or added. Accordingly, Claims 1, 3-4, and 8-9 are currently pending in the application and in condition for allowance.

#### **I. Rejection of Claims 1, 4, and 9 under 35 U.S.C. §103**

The Examiner has rejected Claims 1, 4, and 9 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,903,428 to Grimard, *et al.* (hereinafter "Grimard") in view of U.S. Patent No. 6,944,006 to Zheng, *et al.* (hereinafter "Zheng") and U.S. Patent No. 5,431,737 to Keller, *et al.* (hereinafter "Keller"). The Applicants respectfully disagree.

At item 8 on page 3 of the Office Action of August 3, 2009 (hereinafter "Office Action"), the Examiner states:

8. Grimard *et al.* disclose a physical vapor deposition (PVD) chamber for depositing material on a wafer, substantially as claimed and comprising: a chuck (Figure 1, 104); and a cover comprising a first portion (center elevated portion) and a second portion (circumscribing outer portion, wherein the first portion included in a planar top surface (110) with a plurality of pads (106) contactable with a planar backside of the wafer during material deposition on the wafer in the physical vapor deposition chamber and a chuck cavity on a side opposite the top planar surface for receiving the chuck therein, and wherein a surface of the second portion is parallel to and located below the top planar surface of the first portion.

Lines 25-37 of Grimard state:

FIG. 1 depicts a vertical cross-sectional view of a first embodiment of a hybrid Johnsen-Rahbek electrostatic chuck 100 of the present invention...FIG. 1 depicts a plurality of wafer support mesas 106 on the surface 110 of the chuck body 102 supporting a semiconductor wafer 108....

In the first embodiment, the Johnsen-Rahbek electrostatic chuck 100 contains one or more electrodes 104 embedded within a ceramic chuck body 102....

Thus, the cited portion of Grimard explicitly teaches: element 100 is a chuck, chuck 100 has a chuck body 102, chuck body 102 has an upper surface 110, mesas 106 are on top of upper surface 110 of chuck body 102 and support semiconductor wafer 108, and electrodes 104 are embedded in chuck body 102. As such, element 104 is not a chuck as the Examiner has asserted but, rather, is an embedded electrode in a chuck body. The Examiner has asserted that Grimard teaches a cover but has not specified which element of Grimard is the cover. The Applicants, however, fail to find any teaching or suggestion of a cover in the cited portions of Grimard and respectfully request the Examiner to identify which element of Grimard is the cover.

Absent a teaching or suggestion of a cover, Grimard does not teach or suggest a physical vapor deposition chamber comprising a cover as recited in pending independent Claim 1. Neither Zheng nor Keller has been cited to cure the above-noted deficiencies of the cited portions of Grimard. As such, the cited portions of the cited combination of Grimard, Zheng, and Keller, as applied by the Examiner, do not provide a *prima facie* case of obviousness of pending independent Claim 1 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 1, 4, and 9 and allow issuance thereof.

## **II. Rejection of Claims 3 and 8 under 35 U.S.C. §103**

The Examiner has rejected Claims 3 and 8 under 35 U.S.C. §103(a) as being unpatentable over Grimard, Zheng, Keller and in further view of: Applicants' Admitted Prior Art (hereinafter "AAPA") for Claim 3, and U.S. Patent No. 5,656,093 to Burkhardt, *et al.* (hereinafter "Burkhardt") for

Claim 8. As established above, the cited portions of the cited combination of Grimard, Zheng, and Keller, as applied by the Examiner, do not provide a *prima facie* case of obviousness for pending independent Claim 1. The Examiner has not cited AAPA and Keller to cure the above-noted deficiencies of the cited combination but to teach an aluminum deposition target and the use of stainless steel as a material for conducting pads, respectively. (See Office Action, pages 6-7.) As such, the cited portions of the cited combination of Grimard, Zheng, Keller, and either AAPA or Burkhardt, as applied by the Examiner, does not provide a *prima facie* case of obviousness for pending independent Claim 1 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 3 and 8 and allow issuance thereof.

### **III. Rejection of Claims 1, 3-4, and 8-9 under 35 U.S.C. §103**

The Examiner has rejected Claims 1, 3-4, and 8-9 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Zheng. The Applicants respectfully disagree.

At item 31 at the bottom of page 7 of the Office Action, the Examiner states:

31. Zheng et al. disclose the provision of a peripheral circumferential groove (Figure 3, 275) in a circumscribing outer portion of a pedestal cover (multiple part numbers, e.g., 205, 235) wherein a circumference of a wafer when positioned on the pedestal cover extends inwardly of an inner sidewall of the groove for the purpose of collecting deposition byproducts (column 3, rows 49-51).

Thus, the Examiner appears to be equating the claimed groove with recessed trench 275 of Zheng and to be equating the claimed second portion of the cover with the ceramic annulus 235 of Zheng.

Line 66 of column 3 through line 26 of column 4 states:

The guard 225 further comprises a raised rim 280 radially inward of the recessed trench 275 to prevent the substrate 104 from sliding off of the electrostatic chuck 115. The raised rim 280 is sized such that the substrate 104 resting on the electrostatic chuck 115 is held in place by the raised rim 280...If the substrate 104 is moved excessively out of place, the raised rim 280 prevents the substrate 104 from moving farther. The presence of the recessed trench 275 adjacent to the raised rim 280, as well as the shape of the raised rim 280, protect the raised rim 280 from erosion by the plasma and thereby effectively increase the operational lifetime of the guard 225.

Thus, Zheng teaches that in addition to a circumferential groove 275 on guard 225, the circumferential groove must also be radially outward of a raised rim 280 whose purpose is to hold substrate 104 in place. To accomplish this, the raised rim, and subsequently the groove, must substantially be at the same height as the substrate.

Claim 1 recites "a removable, detachable pedestal slip cover comprising a first and second portion wherein a surface of the second portion is parallel to and located below the top planar surface of the first portion and includes a peripheral circumferential groove..." The claim is specific in that the groove must be in a surface that is parallel to and below a top planar surface on which a substrate rests. As shown in Figs. 7 and 8 of the original specification, if the groove is not below the substrate, deposited material 208 can extend over an upper edge of the substrate and not allow the substrate to be lifted. (*See, e.g.*, paragraphs [0039]-[0040] of the original specification.)

Zheng, as relied upon by the Examiner, teaches, as noted above, that the groove is substantially at the same height as the substrate. As such, Zheng teaches away from the claimed feature noted above that the surface the groove is in must be below the substrate. MPEP §2142.02 states:

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore &*

*Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983),  
*cert. denied*, 469 U.S. 851 (1984)...

MPEP §2145 (X.)(D.)(2.) states:

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)...

Since Zheng teaches away from the invention as claimed, as noted above, the combination of AAPA and Zheng, as applied by the Examiner, is improper per the cited portions of MPEP §2142.02 and §2145 above. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 1, 3-4, and 8-9 and allow issuance thereof.

#### **IV. Conclusion**

In view of the foregoing remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1, 3-4, and 8-9.

The Applicants request the Examiner to telephone the undersigned agent of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

**HITT GAINES, PC**

A handwritten signature in black ink, appearing to read "Steven J. Hanke", written in a cursive style.

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